# Michael Hernandez

## APPLIED MACHINE LEARNING ENGINEER | PYTHON, SQL & MODEL EVALUATION

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github.com/XxCotHGxX

## SUMMARY

Researcher and applied machine learning engineer with experience building reproducible ML/RL evaluation environments, predictive models, and automated quality checks. Hands-on with Python, pandas, NumPy, scikit-learn, PyTorch, XGBoost, LightGBM, SQL, Docker, and tested software workflows; brings precision-manufacturing and warehouse-operations leadership.

## TECHNICAL SKILLS

**Machine learning & data:** Python, pandas, NumPy, scikit-learn, PyTorch, XGBoost, LightGBM, CatBoost, Random Forest, feature engineering, model evaluation, feature importance, stratified cross-validation, out-of-fold evaluation

**Software engineering:** SQL, SQL Server, SQLite, SQLAlchemy, Docker, Git, automated testing, CI/QA, FastAPI, REST APIs, TypeScript, React, Java, Kotlin

**Additional:** SciPy, statsmodels, bootstrap inference, LLM evaluation, computer vision, Azure OpenAI and Azure AI Foundry API integration

## MACHINE LEARNING EXPERIENCE

**Security Engineer | Uber AI Solutions (supporting Google)**

**Research Collaboration | University of Wisconsin-Milwaukee**

- Collaborate with Tian Zhao on AI and code-generation evaluation research.

**AI Data Specialist (Independent Contractor) | Alignerr**

*August 2025 - Present*

- Author and review containerized ML and reinforcement-learning evaluation tasks, executable reference solutions, objective graders, and reward checks.
- Produce automated-test and CI/QA evidence to verify task correctness, reproducibility, and grading behavior.

**Machine Learning Contractor (AI Fellow) | Handshake AI**

*July 2026 - August 2026*

- Built and repaired containerized benchmark tasks across machine-learning, data, and scientific-computing categories, pairing task proposals with reference solutions and automated tests.

**Founder & Machine Learning Engineer | Plethora Solutions LLC**

*September 2025 - Present | Independent Consulting*

- Founded and operate an independent machine-learning consulting business focused on applied ML, model evaluation, and technical prototypes.

## SELECTED MACHINE LEARNING PROJECTS

**Instruction Entropy | Econometric analysis and statistical validation**

- Analyzed benchmark-selection bias across 156 decomposed requirements and a 57-task final sample; separated a significant selection effect (p=.03) from an unconfirmed nonlinear coordination hypothesis.

**The Complexity Kink | Large-scale model evaluation**

- Accepted at the NeurIPS 2026 Evaluations and Datasets Track.
- Built a reproducible evaluation pipeline for 105,000 generations from 5,000 prompts across 21 models, with multi-provider collection, Docker-isolated execution, and unit-test scoring.
- Trained a 10-fold Random Forest model with out-of-fold prediction; used bootstrap inference, placebo tests, and sensitivity analyses to test robustness and document composition sensitivity.

## ADDITIONAL EXPERIENCE

**Honing Department Manager | Midwest Precision Manufacturing**

*July 2018 - January 2024*

- Led a four-person precision-manufacturing team working to +0.0000/-0.0004-inch tolerances and surface finishes better than 4 microinches.

## EDUCATION & RECOGNITION

**Bachelor of Arts in Computer Science | University of Wisconsin-Milwaukee**

*May 2026 | Minors in Business Administration and Economics*

- Second place, 2026 UWM College of Engineering & Applied Science Undergraduate Research Poster Competition.